



October 18, 2000

Leif Erickson, SEB Chairperson  
U.S. Department of Energy  
Office of River Protection  
2440 Stevens Drive  
Richland, WA 99352

Subject: Response to Request for Proposal to Design, Construct, and Commission the Waste Treatment and Immobilization Plant, DOE Solicitation DE-RP27-00RV14136


Dear Mr. Erickson:

We are pleased to submit our proposal to design, build, and commission the Hanford WTP in response to the subject solicitation. From our experience working on this project to date, we know that this effort represents one of the nation's toughest challenges in terms of the design challenges, the size of the construction effort, the aggressiveness of the schedule, the uniqueness of the project, and the importance to cleaning up the Hanford site. To respond to these challenges, our team combines Bechtel's experience as the nation's top design/build contractor with the Washington Group's experience as the United States' only high-level waste vitrification contractor. Together, we have the right knowledge, the right resources, and the right approaches to succeed.

To lead this team, I have selected Ron Naventi to be the Project Manager. Ron brings over 30 years of directly applicable experience to this job. But more importantly, Ron brings the expertise to get the job done on schedule and under budget. He has been doing just this for all of Bechtel National, Inc. in his most recent job as our Operations Manager, overseeing 60 projects worth over \$5 billion a year. Ron is also a Senior Vice President and Partner, making him one of the top 40 managers in the entire 40,000-employee company. His membership in the very highest levels of Bechtel management ensures that he can access the resources and support that will be needed to reach WTP's "glass by 2007" milestone.

Ron is backed by a stellar team made up of the best staff that Bechtel and Washington Group can offer. Our key personnel blend experience with innovation, project knowledge with a fresh perspective, and commercial approaches with government requirements. This blend enables us to restart the design quickly, introduce optimizations effectively, and drive for completion in full partnership with DOE. Bechtel and Washington Group stand behind this team, and I pledge to you Bechtel's full corporate commitment to ensuring that DOE receives superior value from our performance.

Sincerely,

  
Riley Bechtel, CEO

**Bechtel National, Inc.**

Fifty Beale Street  
San Francisco, CA 94105

mailing address: PO 193965  
San Francisco, CA 94119-3965

## Executive Summary

20,000 tons of structural steel. 1.5 million pounds of carbon steel ductwork. 5,600 components and 800 systems. 240,000 cubic yards of concrete. 1,400 tons of stainless liners and cladding. 1,000 miles of electrical cable. 27 million cubic feet of building volume. 500 tanks, vessels, and columns. 2,700 craftsmen. 850 engineers. The equivalent of building two nuclear power plants simultaneously on the same site, but with first-of-a-kind technology. Without a doubt, WTP is the toughest project underway in the nation today. To succeed, the nation's toughest job requires the nation's top contractors.

And that is what we brought together in our team. The *Engineering News-Record* ranks Bechtel as the nation's top design firm, top design/build firm, and the top construction contractor. In fact, Bechtel does 72% more design/build work each year than our nearest competitor; 347% more than the next nearest firm. But being the biggest isn't what drives Bechtel; satisfying our customers is our number one priority. Our dedication to supplying top quality services has led our satisfied customers to make repeat business 87% of our work.

With Bechtel as the prime contractor on our team, the Washington Group is a fully integrated subcontractor. Washington brings all of DOE's high-level waste vitrification experience from their highly successful West Valley and DWPF operations. They bring invaluable expertise in research and testing, commissioning, and operability considerations from their unique operating experience to minimize the WTP learning curve and accelerate progress.

Together, Bechtel and Washington have the right approach, knowledge, and experience to help DOE achieve "glass by '07."

### ***The nation's top contractors for the nation's toughest project***



- Nation's number 1 design/build contractor
- Experience on 19,000 projects in 140 countries
- \$15B revenue last year
- 40,000 employees
- Reputation of success on one-of-a-kind projects



- Nation's top nuclear waste research and technology, commissioning, and operations contractor
- Operator of DOE's only two vitrification plants—DWPF and West Valley
- 38,000 employees
- ISMS leader in DOE



- Bechtel as prime contractor provides single-point accountability
- Fully integrated team with best candidate in each position
- Leaders in DOE Complex in ISMS implementation
- Experience in every element of SOW
- No FOCI barriers
- Corporate cultures embrace zero accident philosophy, nuclear quality,
- Small, seamless team with just two partners
- Shared fee pool to align objectives
- 78,000 person corporate resource pool with depth in each area needed by WTP scope of work

# Technical Approach

## Design

We have carefully planned our restart of the WTP project, taking full advantage of our program knowledge, our incumbent resources, and our existing plans, procedures, systems, and processes. By leveraging this extensive base of existing resources, we can resume the design faster, resulting in assumption of the Design Authority at the end of the twelfth week after contract award.

However, our approach is not to merely pick up where things were left. Our approach includes specific new initiatives to optimize all project phases. We start by setting up an independent Challenge Team to revisit design assumptions and bases. We bring Washington Group's fresh perspective and lessons learned to all elements of the program, but specifically in the R&T and optimization arena where we can apply West Valley and DWPF lessons learned. Through initiatives such as this, we set a realistic—yet aggressive—baseline that we can control for the duration of the project.

## Procurement

Each year, Bechtel procures over \$6 billion worth of goods and services, including about \$2 billion in support of our government projects. Our state-of-the-art system fully uses the power of the internet to advertise, solicit,



receive, evaluate, and award subcontracts. The efficiency gained through e-business innovations such as reverse auctions generates savings of 25%.

Another innovation are our MPAs (multi-project acquisitions) which let us leverage Bechtel's worldwide purchasing power to gain significant volume discounts and improved delivery for WTP. With DOE's agreement to use these pre-placed agreements, we anticipate savings of up to 30% in total installed costs.

**Benefits of MPA**

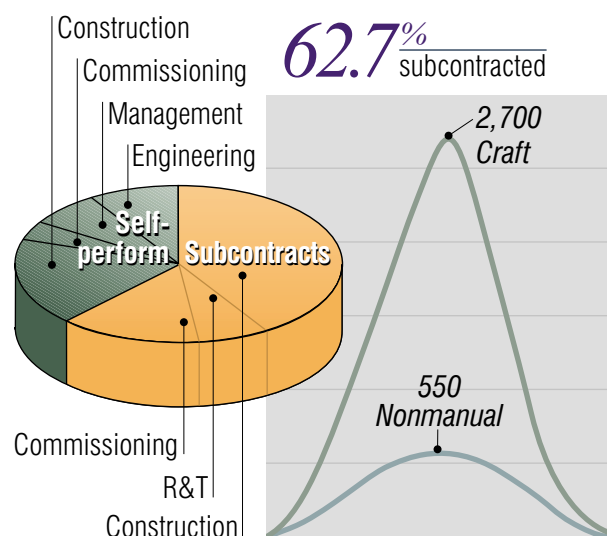
- Up to 70% procurement cycle time reduction
- 22% price reduction for major components
- Increased constructibility
- Enhanced quality
- Risk shared with suppliers
- Just-in-time delivery eliminates storage costs

**30%** reduction in total installed cost

## Technical Approach

### Construction

Our approach to construction is based on a detailed analysis of project needs. To lower overall risks, we carefully selected critical construction tasks for self-performance to achieve greater control of the risk. We then packaged over 62% of the project's activities into subcontracts that ensure we to meet the 46% small business goal while also optimizing



construction efficiency. The result is a finely sequenced construction approach that enables us to properly manage and integrate the simultaneous efforts of as many as 4 large business and 25 small business contractors, and over 2,700 craftsmen. Our plans include specific initiatives to offset the known shortage of certain crafts.

Bechtel's core competency in subcontract management is critical to the success of this effort. Our corporate depth of construction specialists and our state-of-the-art construction management tools have allowed us to succeed on projects such as the Oak Ridge EM M&I, where 85% of the project's revenue is subcontracted. In the first 18 months of the contract, we placed over \$1 billion in subcontracts.

### Operability and commissioning

Our approach to WTP is customer centered, construction driven, and operations focused. Operations determine design requirements: the plant is designed to build, built to test, and tested to operate. With this as our guiding principle, we know that operability and commissioning must be our objectives from Day One of the contract. For this reason, Washington Group adds their unique West Valley and DWPF experience to our team. They have helped build our approach and our proposal, and will provide the talent in operations, R&T, and commissioning as a fully integrated preselected subcontractor.

One of the first actions Washington Group helped with was defining the scope of the operability and commissioning subcontract we will award before April 2001. Using their knowledge of high-level waste vitrification plant operations, we have crafted a subcontract that first assists our team with hiring, training, and certifying plant operators and support staff. As our work on WTP concludes, this subcontract is structured to be easily transferred to the future operations contractor, providing continuity in the operations staff, lessons learned, and plant knowledge.

#### Bechtel Washington Scope

Acceptance testing engineers	Trainers
Project Management	Operators
Project Controls	Lab technicians
Administration	Procedure writers
Procurement	Maintenance (M/E/I)
Construction	Radiation technicians
Engineering	Commissioning engineers
ES&H	Maintenance software management
HR/IR	
QA	

#### Subcontracted Scope



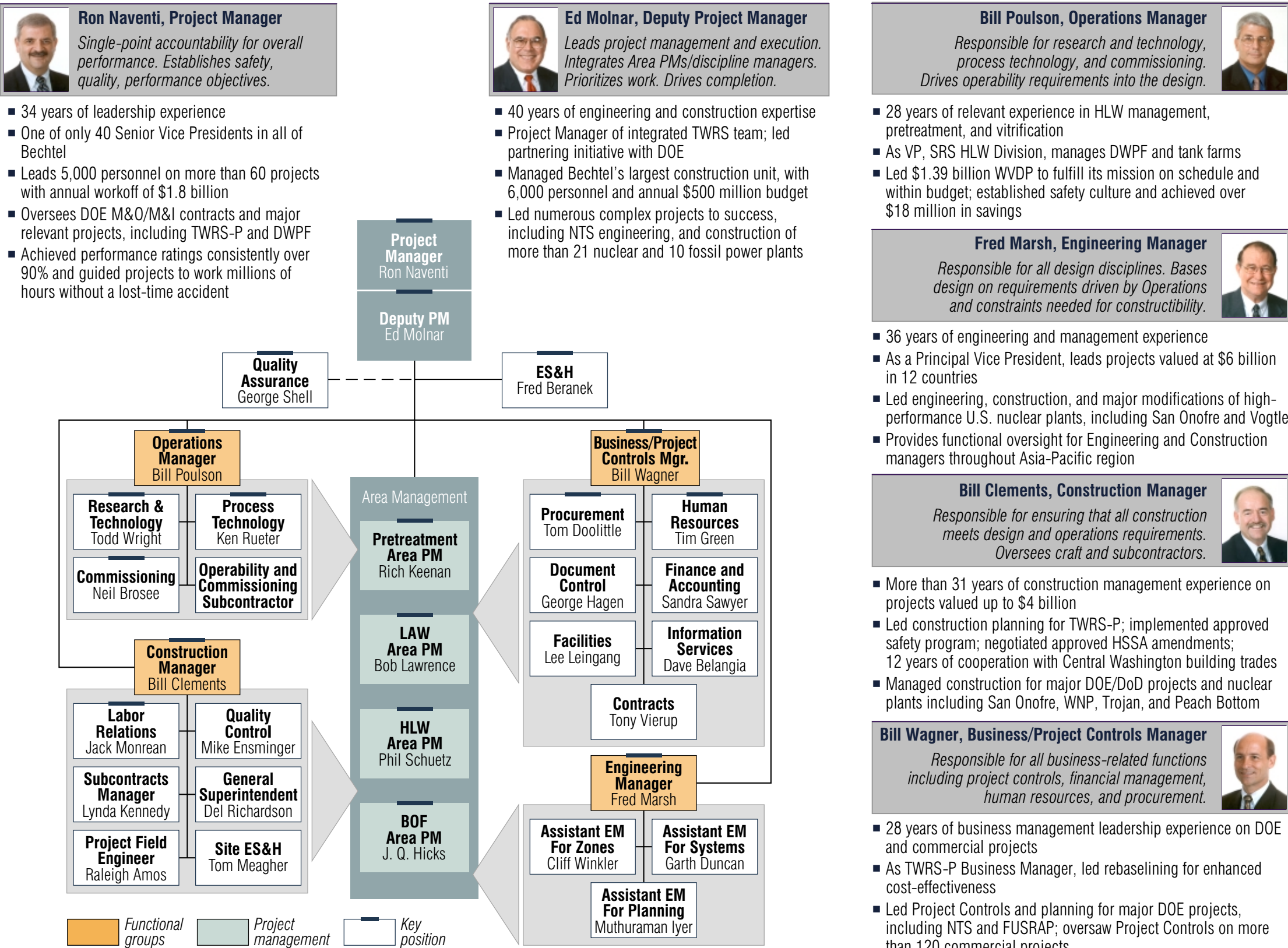
# Key Personnel Qualifications

In building our organization, we identified 18 positions that we believe are critical for WTP success. We named them all as key personnel, and each person has confirmed availability for and commitment to the WTP project. Together, this team brings a carefully crafted blend of prior WTP experience, vital lessons learned from DWPF and West Valley, and fresh insights for optimizing and executing existing WTP plans. It is a team of senior managers with access to corporate resources, corporate specialists and experts, commercial experience, and government project know-how.

Our key personnel work within a matrix that intentionally creates dynamic tension among the four functional groups and our project managers. Each functional department (Operations, Engineering, Construction, and Business Management) dedicates representatives to each of four area teams (Pretreatment, HLW, LAW, and BOF), managed by Area PMs. Operations sets requirements for design; Engineering creates a design to meet operability and constructibility requirements; and Construction builds according to design requirements. All steps are achieved within budgets and schedules managed by the Area PMs. This “vertically” integrates our organization regarding scope, schedule, and cost.

The functional representatives in each of the four area teams work with their functional managers to accomplish their discipline’s scope. Performing the work in the functional departments—managed by the functional managers—ensures consistency, technical accuracy, efficient resource use, shared lessons learned, and better cross-team prioritization. The PM and Deputy PM integrate and prioritize effort of the area teams.

This approach optimizes the project. No single discipline or concern dominates our organization or approach. The balance among the different groups, guided by excellent management, generates a project designed to be built, built to be tested, and tested to operate.



# Project Management

Our approach to project management is built around four principles: safety is our top priority, we work in partnership with our customers, we execute with discipline and we integrate the project both vertically and horizontally, and. Our project managers, and the tools we supply to them, support the accomplishment of these goals.

## Safety

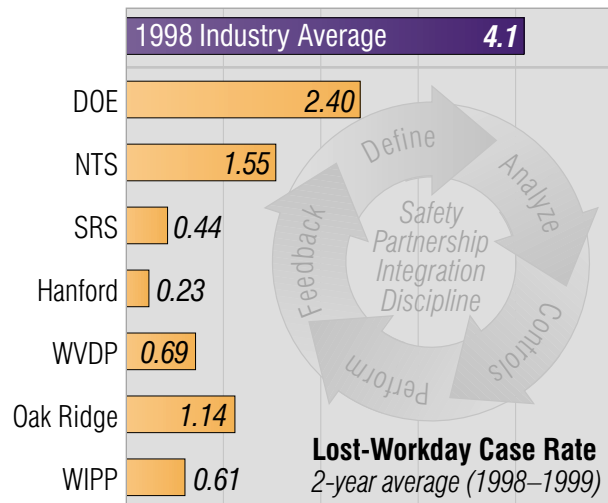
Our team-based ISMS approach builds on the strengths of the approach implemented on TWRS-P and proven at the 18 DOE sites where we have supported ISMS programs. More importantly, it has been demonstrated by our industry-leading safety statistics.

## Partnership

We value open, honest communication with no surprises. We are excited about the opportunity to build a partnering relationship for the WTP project. To this end, we volunteer to sponsor a formal, facilitated partnering meeting with DOE and CHG within 45 days of contract award, to align goals, remove roadblocks, and set expectations.

## Discipline

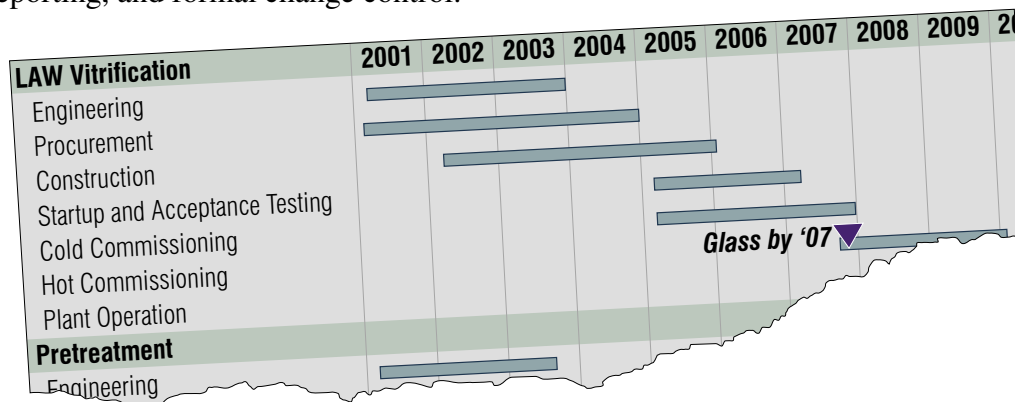
Both Bechtel and Washington Group have cultures built in the nuclear industry. Our approach incorporates strong conduct of operations, nuclear-level quality control, strict configuration management, literal compliance, earned value reporting, variance analysis, trend reporting, and formal change control.



## Integration

We ensure that WTP is integrated at multiple levels: with DOE as customer; with the tank farm contractor, the future WTP operator, and the other stakeholders; vertically through our project managers for cost, schedule, and scope; and horizontally through our discipline managers for consistency, accuracy, and efficiencies. This approach ensures proper focus on getting the job done right the first time, on cost, and within budget.

Our life-cycle baseline is a major tool for integrating the project. It integrates cost, schedule, and resources; all the WTP project participants; our subcontractors and our craft labor; annual funding profiles with long-term funding needs; and research and technology efforts into critical path design tasks.



## Experience and Past Performance

We have directly relevant experience in every element of the WTP scope of work. Our team combines all the experience from the WTP project to date with the totality of DOE's high-level waste vitrification experience—from design through operations. To this, we add extensive commercial experience in designing, building, and commissioning most of the nation's nuclear generating units and experience supporting DOE at 18 sites. This blend of commercial and government, nuclear and chemical processing, and design through operations experience assures DOE that we understand the complexities of the WTP project.

Our past performance attests to our ability to deliver best value to our customers. Our performance ratings from DOE are consistently over 90%. Approximately 87% of our work is repeat business from satisfied customers. Our ability to meet customers' needs has allowed us to build our business to become the largest engineering and construction firm in the United States. With over \$23 billion in new work booked last year, Bechtel has garnered 3 times as much new work as our nearest competitor—because we deliver consistent value.

### **Integrated safety management**

*Led or supported ISMS programs at 18 DOE sites. Safety records are lowest in DOE Complex.*

### **Project management**

*Recognized leaders in project management with a full suite of government-approved systems, many already proven on WTP. In 1999, managed 1,000 projects worth \$15 billion for 600 different customers.*

### **Transition planning/execution**

*Completed 14 successful transitions on 10 DOE sites in last 10 years. Reputation for assuming responsibility for ongoing projects such as the South Texas and Comanche Peak nuclear plants and the Channel Tunnel.*

### **Facility/process design**

*Designed WTP to date, DWPF, West Valley, 150 nuclear generating units, and 350 major chemical and petrochemical plants.*

### **Construction management**

*102-year history of construction management, including 19,000 projects in 140 countries.*

### **Acceptance testing**

*Directly relevant testing, startup, and commissioning experience from DWPF, West Valley, and other SRS nuclear facilities.*





# Why Bechtel Washington?

**Experience in every scope of work element lowers risk**



*Transition*



*Design*



*Construct*

*Test*



*Commission*

- Incorporation of West Valley, DWPF, TWRS-P, ITP, and HWVP lessons learned optimizes design, streamlines construction, and enhances operability
- DOE-Complex leaders in ISMS backed by corporate commitment to Zero Accident philosophy
- Knowledge from TWRS-P expedites mobilization and resumption/continuity of design
- Existing relationships with DOE, stakeholders, and regulators engenders credibility and continuity
- Single-point accountability in Ron Naventi and Bechtel ensures quick, onsite decisions
- Talented senior managers from Bechtel and Washington Group with experience in all areas crucial to success
- Seamless team with access to 78,000 corporate resources, including experts in each SOW element
- Over 20 years of experience with DOE HLW; responsible for managing 50% of DOE's HLW
- Dedicated to partnering with DOE and site contractors; operate in fully open, "no surprises" atmosphere
- Most nuclear experience in U.S. today; two of the only EPC companies to retain a nuclear culture from our support services at most U.S. nuclear power plants
- Strong relationships with Hanford labor and building trades, and already a signatory to Hanford Site Stabilization Agreement

***Bechtel's  
continuity with  
Washington's  
innovation  
make us the  
best-value choice***



## Our Commitments

- Instill ISMS and Zero Accident safety culture at every level of the organization
- Implement Bechtel's e-business approaches on \$1 billion of procurements, resulting in 25%—\$250 million—savings based on historical performance
- Already conducting R&T using Bechtel funds to expedite critical decisions and lower risk
- Provide corporate funds to train/assist small, small disadvantaged businesses in competing on and performing WTP work
- Place corporate-purchased welding equipment and an instructor at Richland-area schools to help train craft labor to offset severe shortage in welders
- Spend \$1 billion with local, small, small disadvantaged, or women-owned small businesses
- Mobilize corporate-sponsored Challenge Team to identify optimization targets within 2 weeks
- Sponsor a formal partnering session with DOE, CHG, and us within 30 days of contract award to create a full and open relationship that precludes surprises
- Implement ProjectNet by February 15, 2001 to give DOE and all project participants real-time access to drawings, models, and cost, schedule, trend, and performance data



Bechtel  
Washington

